

volume programming stemming from a single source such as news, sports or older evergreen programming, and original series which can more easily be funded through production budgets. These grants also require documentation of operational support (and in some cases financial support) of program producers and distributors whose programming is included in competing proposals.

110. It is our opinion that as the captioning regulations required under the Telecommunications Bill of 1996 are enacted, continued Federal support will help ease the transition into a much more accessible Information Age. As the FCC determines timetables, exemptions, and other rules, there will be a key role for the foreseeable future for Federal funds in the areas or classes of programming that meet at the intersection of most-essential-to-the-public-interest and most-vulnerable-to-economic-burdens. Such intersections may occur in the areas of national news, documentaries, educational programs, children's programs, classic movies and other "evergreens," and programming produced by non-profit entities.

111. The world of public broadcasting has been adjusting to new financial realities. Cuts in federal funding of CPB and PBS could threaten mission-related services, such as captioning and DVS. However, this sector of broadcasting with the most limited resources has nonetheless made tremendous efforts to be as accessible as possible. For example, PBS member stations have a higher percentage of S.A.P.-capable transmitters (presently necessary for broadcasting video description) than any other network. Such creative uses of limited resources (like the CC University project) is a hallmark of public broadcasting and its mission-related achievements.

112. *Video Description.* Blind and visually impaired Americans will suffer with any cut in the level of funding for video description since the current amount of available description is so small and since such a large portion of the costs are borne by the Federal government. Video description is a relatively new concept with limited awareness due in large part to limited availability. Any cut in funding will reduce the amount of programming and resources for promotion, thereby further decreasing awareness of the service and access to television programming. As with captioning, video description would not exist today without the vital early support of federal funds (from both the Corporation for Public Broadcasting and the Department of Education). Here again, it is apparent that the Department of Education administers an effective program which, through multiple grant awards, has fostered competition and which, each year, increases the amount of private-sector involvement.

## VI. MARKET INCENTIVES FOR CLOSED CAPTIONING AND VIDEO DESCRIPTION (NOI paragraph 23)

113. *Closed captioning.* Over the years, fundraising and corporate caption sponsorship have been key initiatives in growing the service, both within and outside of government grants. Leveraging one commitment from an advertiser or a network to secure another from the producer or a foundation is a painstaking fundraising effort undertaken with the cooperation of the networks and local stations.

114. This effort continues to involve new partners in the captioning process and helps build awareness and acceptance of captioning as an important part of our television system. Sponsorship has proved most successful on programs which are very popular, have high name recognition and offer a company a relatively noncontroversial and positive public image. This model has proven successful on some cable programs as well.

## VII. INQUIRY REGARDING MANDATORY CAPTIONING AND VIDEO DESCRIPTION REQUIREMENTS

115. *Captioning - program type.* (NOI paragraph 31). Deaf and hard-of-hearing viewers are the best source of information about the audiences for various program types. Certainly, The Caption Center is often questioned by people unfamiliar with deaf and hard-of-hearing viewers about the need to caption sports and music programming. We can certainly attest that there are many, many avid golf, baseball and other sports enthusiasts in the deaf and hard-of-hearing audience who find announcers' score-keeping, commentaries, ad libs, and idiosyncratic banter part and parcel of full enjoyment of the sport as well as key to being a knowledgeable fan.

116. Similarly, captioned music shows and captioned music videos are very popular with deaf and hard-of-hearing viewers, especially young deaf and deaf and hard-of-hearing students who are intent on being as up-to-date as their hearing peers. In general, uncaptioned programming of any type isolates the deaf and hard-of-hearing viewer from friends and family, complicates sharing interests, and limits access to popular culture.

117. There is a great hunger for captioning of local news and public affairs programming from both commercial and non-commercial broadcast and cable outlets as well as cable coverage of the proceedings from our nation's Capitol.

118. *"Existing contracts."* According to Sy Dubow of Gallaudet University's National Center for Law and Deafness, the clause of the Telecommunications Bill as cited in the FCC's NOI in paragraph 31 referring to exemptions due to "existing contracts" is a legacy of the initial negotiations surrounding the Telecommunications Bill when it was first introduced in 1994. At that time, program providers stated their concerns about syndication

contracts which required distribution of hundreds of hours of tapes to local TV stations around the country on a set schedule. Would this new bill require them to recall all of those tapes, caption them, and resupply the tapes all within a time period that they were contractually bound by? According to Mr. Dubow, this was viewed as a difficult challenge at the time and the drafters of the original language of the bill agreed that these sorts of contracts would provide the basis for some sort of exemption.

119. *Video Description.* (NOI paragraph 31). It is most appropriate for people who are blind or visually impaired to comment on specific program types that should or should not be exempted from any video description requirements. However, since video description is a relatively new service (compared with captioning), an explanation of a few of description's distinguishing characteristics is in order.

120. In the case of sports programming, even play-by-play commentary is often supplemented by graphics, replays or special visual effects which would remain inaccessible to a blind audience without video description. In some instances (often the most dramatic and crucial), television play-by-play commentary frequently steps back entirely, letting the picture and ambient sound tell the story. In these cases, the program becomes inaccessible to a blind audience.

121. When a live radio simulcast is available, it could serve the purpose of video description, but the question remains whether such a simulcast would be universally available. Certain broadcasts could be limited to specific local markets, and might be further restricted by the various blackout rules effecting sports programming. A creative response here could be the acquisition and use of a radio simulcast on the S.A.P. accompanying the broadcast program.

122. Breaking news events may create situations for which video description is either impractical or unnecessary. However, as demonstrated by our description of the 1993 Presidential Inauguration on PBS, live description of news events is not only possible, but can provide true access to information not otherwise available to blind and visually impaired audiences.

123. It is important to add here that video description is *not* radio. In following up with blind and visually impaired consumers after the live description of the Inaugural, we asked blind people, "What is the value of describing the television coverage, over simply listening to the coverage provided by National Public Radio (which covered it thoroughly)?" Another way to ask the question is, "What is the difference between description and journalism?" Blind people told us that while NPR and other network radio coverage is quite good, it is produced for a sighted audience and it assumes

the people who are listening have sight but are simply not watching television.

124. While radio is written for the ear, it is written for the ear of a sighted person. For example, a journalist would never take the time to describe Mr. Clinton or Mr. Gore's physical appearance, since a journalist assumes the listener knows what they look like. This is not to say that a journalist would not perhaps describe their clothing, but their basic physical appearance, such as, "President Clinton has thick, slightly graying hair," would never be included in a radio broadcast. One blind person told DVS he didn't realize that Mr. Gore was taller than Mr. Clinton, or that Mr. Clinton did so much hugging. Likewise certain famous buildings associated with the government are not described by journalists, as again they assume that one knows what the U. S. Capitol looks like. Blind people said the descriptions added to the Inaugural broadcast of key buildings, the width of Pennsylvania Avenue, the White House, and the Capitol were very useful to them.

125. It must also be recognized that blind people don't receive their news in isolation. They may be able to get news updates from NPR or a commercial all-news radio station, but if their family, friends, or co-workers, are watching television and they're in the room, a blind person shouldn't have to leave the room and switch on a radio to get a more complete picture.

#### Technical and Quality Standards (NOI paragraph 32 )

126. *Closed captioning.* Although the text of the NOI inquires only as to technical and quality standards relating to video description, we also have a vital concern relating to technical standards governing the transmission of closed captions. At present there are no rules or regulations which require broadcasters to preserve and properly deliver caption data to consumers. Regulations governing cablecasters (FCC Cable Regulations 76.606) are not well understood nor widely known. Since millions of deaf and hard-of-hearing viewers rely on over-the-air broadcasts for their signal, it seems that requirements to transmit closed captions should apply equally to broadcast, cable and any other transmission methods which arise in the future. And all such requirements must be followed through proper monitoring and enforced.

127. The Caption Center and other caption agencies spend vast numbers of hours chasing down consumer complaints about missing or garbled captioning, with causes enormously difficult to trace. Vigilance and quality control by each link in the broadcast and cable transmission chain would be relatively inexpensive and yet could eliminate this number-one complaint of caption consumers.

128. *Video description.* As stated previously, there is no guarantee that any program distributor will transmit video description intact,

particularly when programming is obtained from third-party sources and may be subject to signal processing, remodulation or record and playback. In accordance with the Cable Television Consumer Protection Act of 1991, the Commission adopted standards that required cable systems to retransmit broadcast signals in their entirety including, "if technically feasible, ...any program-related material transmitted by the broadcaster on a subcarrier or in the vertical blanking interval necessary for the receipt of programming by handicapped persons..." (102d Congress, Report 102-92, June 28, 1991).

129. These standards could be extended to all providers to ensure that descriptions are transmitted intact. Again, the conditional language in the current standard is no longer needed, due to preponderance of professional tape formats with multiple audio channels and the other hardware necessary to accomplish "receipt of programming by handicapped persons."

130. As is the case with captioning, there are content as well as technical quality issues. And due to the fact that video description requires a certain degree of creative writing ability on the part of the individual describer, variations in quality can be expected. If there are put into place either incentives or requirements which sharply increase the demand for description services, consumers should be empowered to comment on and effect the maintenance of high-quality services. And, as with captioning, video description should be as carefully produced as the program itself, with programmers being as proud of and attentive to the quality and accurate transmission of their description track as of their main program audio.

131. *Competition for use of the Second Audio Program.* Video description presently competes with alternate languages (primarily Spanish) as well as radio reading services and news services on the S.A.P. Situations have arisen where a PBS program has both a Spanish and description soundtrack available. Since there is but one S.A.P channel, the only solution to date has been for local stations to decide which additional track would be of more importance to their audience or to air the program more than once, with each S.A.P. service being made available on subsequent airings.

132. *Impact of digital technology.* Digital transmission is designed to allow greater flexibility of the broadcast spectrum. Early specifications from the Advanced Television Systems Committee (ATSC) indicated that portions of the audio bandwidth would be made available for both description and alternate languages, so the competition for a single auxiliary audio channel would be removed. FCC action could assure that such capability is required in future TV systems.

133. FCC action requiring a set-aside of bandwidth for video description in digital TV should be matched by a requirement of set-top box manufacturers and digital TV manufacturers that they enable, in all sets,

convenient and universal "display" of the video description signal. The ability to select both main program audio and video description simultaneously will also help eliminate the costly mixing step in provision of video description services. These requirements would help obviate any possible need for retro-fitting TV receivers or requiring consumers of video description to buy a special (and probably costly) device to service their particular needs. Notice of these requirements should be transmitted to the manufacturers as soon as possible since so much of this technology has reached the later stages of design.

Current Accuracy of Closed Captioning on Television Programming (NOI paragraph 33)

134. *Common caption problems.* Caption errors occur for a variety of reasons. The most common caption problems are caused by inadvertent errors in the transmission of captions by the broadcaster, distributor, cable network, local TV station or cable system operator. In our experience, captions have been stripped, moved to the wrong line of the vertical blanking interval or flipped onto the wrong field of line 21 by maladjusted signal processing equipment. Today, the vast majority of caption data is supposed to reside on field one of line 21, caption channel one (CC1). As more and more caption data is sent on field two (and other caption channels) of line 21, improper handling of the line-21 signal will result in even more confusion and consumer complaints.

135. The Caption Center publishes a series of bulletins for television and video professionals, *TechFacts*, which explain various technical aspects of captioning, including how to properly transmit caption data. Unfortunately, it is our experience that awareness of these technical requirements is, with only few exceptions, far too low among engineering and operations staffs.

136. The critical technical steps of a quality captioning service are accurate encoding, transmission, reception and decoding of the signal. The major networks are to be commended for their attention to this vital part of the service. Deaf viewers would greatly benefit if local stations and cable operators heightened their monitoring of the signal and enhanced their quality controls as well.

137. One simple solution for broadcasters, cable networks, local affiliates and local cable operators is the use of a closed-caption decoder to monitor the captioned signal as it is fed. Also, captions should be monitored during the duplication process and a spot-check should be made of all recordings to ensure that equipment is not inadvertently stripping captions, moving them onto the wrong line or placing them in the wrong field. All of the technical problems described below can be averted by monitoring the captioned signal with a decoder as well as a waveform monitor.

- Duplication or transmission of captioned video is often handled by equipment which is misadjusted so that it blanks line 21. Equipment or processes which can strip line 21 include time base correctors, processing amplifiers, frame stores, digital video effects and switchers. Time compression may also cause loss or garbling of captions.
- Just as line-21 data is often blanked, it is also commonly shifted to another line. Video is frequently moved up or down a line, and the caption data is then transmitted on a line other than line 21. Since caption decoders look for primary caption data only on line 21, field 1, caption data on the wrong line are effectively lost.
- "Field-flipping" can also occur, placing caption data intended for field one of line 21 onto field two, or vice versa. If multiple caption channels are used and their data are "misplaced," the wrong captions will appear.
- Editing a captioned master can interrupt or destroy parts of the caption data, causing garbled or missing captions. This occurs because caption data is transmitted one or two seconds prior to their appearance as a displayed caption.
- A line-21 encoder left in the wrong mode can strip all upstream caption data. Line-21 encoders should be left in the transparent mode when upstream caption data are present.

138. *Emergency announcements and video effects.* For the most part, emergency messages which crawl across the bottom of the screen are obscured by captions. Crawls positioned above the three-line, real-time caption display area or placed across the top of the screen would generally avoid this problem. Also, when a Digital Video Effects-type machine is used to create a "push-back" or shrinking of the picture to add graphics, weather alerts or other information, the DVE generally strips the captions. The commercial networks are experienced with this issue due to the recent trend of using push-backs to present ending scenes and final credits of a series in one part of the screen while simultaneously running upcoming promotions. They simply strip and re-insert caption data after the DVE effect is achieved. However, many local stations and cablecasters are unaware that caption data are being stripped or are unaware of how to remedy the problem.

139. *Electronic newsroom and live caption problems.* A TelePrompter script fed as captions (electronic newsroom captioning) often contains confusing text unless carefully monitored. It is common for abbreviations, camera cues and anchor cues in the TelePrompter script to be transmitted along with captions to the viewer. This "automated" method of captioning also does not provide comprehensive captioning of all segments of a news program - often

omitting captions for live remotes, interviews, ad libs, and sports and weather reports.

140. Mistakes occur in live or real-time captions due to both human and software error. Real-time captions are created by a specially trained court reporters, called stenocaptioners. Using software which recognizes machine shorthand and translates it into English, stenocaptioners transcribe the audio in real time at speeds up to 220 words per minute. Even at accuracy rates of up to 99%, this can result in more than two mistakes per minute. These mistakes occur either because of stenocaptioner error or software mistranslates of the operator's key strokes. Software mistranslates happen when the software does not recognize the machine shorthand sent to it. These mistakes appear as a phonetic rendering of the word.

141. Lengthier on-air experience and enhanced training can remedy these problems in the short run. In the long term, a larger pool of skilled stenocaptioners will eventually enter the marketplace due to efforts by the National Court Reporting Association, court-reporting schools, and other organizations which are looking to provide enhanced stenography training.

142. *Speech recognition not an immediate solution.* Though the "magic solution" of computerized speech recognition is often raised, our research and experience indicates that, short of an unexpected scientific breakthrough, a skilled stenocaptioner will continue to outperform the best automated speech-to-text technology for many years to come. When the required parameters of large vocabulary, multiple and independent voices, non-discrete speech patterns, and 99% accuracy at speeds up to 220 words per minute are taken together, even large computer systems have not come close to providing for the needs of live, real-time captioning.

#### Transition (NOI paragraph 34)

143. *Transition - impact of digital technology.* Experts in the field of digital TV recognize the need to be "backward compatible" and assure that the needs of the users of all present analog services are attended to in the transition to digital TV. Technical capability presently exists to turn all captions and descriptions for analog TV into captions and descriptions for digital TV. What is missing is the awareness of such a need (or requirement) and the attention of the developers of the new technology to set universal standards for carrying the Services. A lack of understanding of the Services can also result in improper degradation of the captioning or description signal as they are imported into the new signals.

144. As previously stated, carriage of the Services during transfer of analog programming to digital programming is not a large challenge and can

be accomplished with today's technology. Therefore, a decision which exempts or delays inclusion of the Services in the digital domain will relegate people who are deaf or blind to the back of the bus as the exciting new information and entertainment technologies are made available to the mass audiences.

#### VIII. CONCLUSION

145. Like many ventures involving mass media, the success of captioning and video description has required ongoing collaborations of many partners from a variety of dedicated supporters in both the public and private sectors. Now that the Telecommunications Bill has become law, even more cooperation will be necessary to assure that deaf and hard-of-hearing and blind and visually impaired Americans share in the technological benefits soon to be offered in communities throughout the country.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Larry Goldberg", with a long horizontal line extending from the end of the signature.

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ATTACHMENT A - PUBLIC TELEVISION STATIONS CARRYING DVS VIA  
S.A.P.

**PBS Stations That Carry DVS****January 1996**

Alabama	Birmingham	WBIQ-10	11/95
Alabama	Demopolis	WIIQ-41	11/95
Alabama	Dozier	WDIQ-2	11/95
Alabama	Florence	WFIQ-36	11/95
Alabama	Huntsville	WHIQ-25	11/95
Alabama	Louisville	WGIQ-43	11/95
Alabama	Mobile	WEIQ-42	11/95
Alabama	Montgomery	WAIQ-26	11/95
Alabama	Mount Cheaha	WCIQ-7	11/95
Arizona	Phoenix	KAET-8	1/90
Arizona	Tucson	KUAS-27	10/91
Arizona	Tucson	KUAT-6	10/91
Arkansas	Arkadelphia	KETG-9	4/95
Arkansas	Fayetteville	KAFT-13	4/95
Arkansas	Jonesboro	KTEJ-19	5/93
Arkansas	Little Rock	KETS-2	5/93
California	Eureka	KEET-13	6/95
California	Los Angeles	KCET-28	1/90
California	Sacramento	KVIE-6	2/90
California	San Diego	KPBS-15	6/91
California	San Francisco	KQED-9	1/90
Colorado	Denver	KRMA-6	6/90
Connecticut	Stamford	WEDW-49	6/95
Connecticut	Hartford	WEDH-24	6/95
Connecticut	New Haven	WEDY-65	6/95
Connecticut	Norwich	WEDN-53	6/95
Connecticut	Waterbury	WEDH-12	6/95
D.C.	Washington	WETA-26	1/90
Florida	Pensacola	WSRE-23	1/90
Florida	Tampa	WEDU-3	2/92
Florida	Tampa	WUSF-16	2/92
Georgia	Atlanta	WPBA-30	12/94
Idaho	Coeur d'Alene	KCDT-26	11/92
Idaho	Moscow	KUID-12	11/92
Illinois	Chicago	WTTW-11	1/90
Indiana	Bloomington	WTIU-30	6/94
Indiana	Evansville	WNIN-9	10/93
Indiana	Ft. Wayne	WFWA-39	10/92
Indiana	Merrillville	WYIN-56	11/94
Indiana	South Bend/Elkhart	WNIT-34	2/91
Iowa	Des Moines	KDIN-11	3/90
Iowa	Iowa City	KIIN-12	2/91
Kansas	Bunker Hill	KOOD-9	6/95

Kansas	Lakin	KSWK-3	6/95
Kansas	Wichita	KPTS-8	7/95
Maine	Bangor	WMEB-12	12/92
Maine	Bangor	WMED-13	2/94
Maine	Presque Isle	WMEM-10	2/94
Maine	Lewiston	WCBB-10	1/90
Maryland	Annapolis	WMPT-22	4/91
PBS Stations that carry DVS (cont.)			

Maryland	Baltimore	WMPB-67	1/90
Maryland	Frederick	WFPT-62	4/91
Maryland	Hagerstown	WWPB-31	4/91
Maryland	Oakland	WCPT-36	4/91
Maryland	Salisbury	WCPB-28	4/91
Massachusetts	Boston	WGBH-2	1/90
Massachusetts	Springfield	WGBY-57	1/90
Michigan	Bad Axe/Ubly	WUCX-35	1/90
Michigan	Detroit	WTVS-56	5/91
Michigan	Flint	WFUM-28	1/90
Michigan	Grand Rapids	WGVU-35	1/90
Michigan	Kalamazoo	WGVK-52	1/90
Michigan	University Center	WUCM-19	1/90
Minnesota	St. Paul	KTCA-2	2/94
Missouri	Kansas City	KCPT-19	10/91
Missouri	Springfield	KOZK-21	7/94
Missouri	St. Louis	KETC-9	1/90
Nebraska	Alliance	KTNE-13	2/91
Nebraska	Bassett	KMNE-7	2/91
Nebraska	Hastings	KHNE-29	2/91
Nebraska	Lexington	KLNE-3	2/91
Nebraska	Lincoln	KUON-12	2/91
Nebraska	Merriman	KRNE-12	2/91
Nebraska	Norfolk	KXNE-19	2/91
Nebraska	North Platte	KPNE-9	2/91
Nebraska	Omaha	KYNE-26	2/91
Nevada	Las Vegas	KLVS-10	4/93
Nevada	Reno	KNPB-5	11/93
New Hampshire	Durham	WENH-11	2/93
New Hampshire	Littleton	WLED-49	2/93
New Hampshire	Keene	WEKW-52	2/93
New Mexico	Las Cruces	WRWG-22	11/95
New York	Binghamton	WSKG-46	1/95
New York	New York	WNET-13	1/90
New York	Plattsburgh	WCFE-57	5/92
New York	Schenectady	WMHT-17	1/90

New York	Syracuse	WCNY-24	5/91
North Carolina	Chapel Hill	WUNC-4	11/91
North Carolina	Charlotte	WTVI-42	12/92
North Carolina	Concord	WUNG-58	8/93
North Carolina	Greenville	WUNK-25	6/95
North Carolina	Wilmington	WUNJ-39	8/93
Ohio	Akron	WEAO-49	1/90
Ohio	Alliance	WNEO-45	1/90
Ohio	Athens	WOUB-20	5/93
Ohio	Bowling Green	WBGU-27	1/90
Ohio	Cambridge	WOUC-44	5/93
Ohio	Cincinnati	WCET-48	8/90
Ohio	Cleveland	WVIZ-25	1/90

PBS Stations that carry DVS (cont.)

Ohio	Columbus	WOSU-34	10/93
Ohio	Portsmouth	WPBO-42	10/93
Ohio	Toledo	WGTE-30	1/90
Oregon	Bend	KOAB-3	1/90
Pennsylvania	Allentown	WLVT-39	1/90
Pennsylvania	Harrisburg	WITF-33	7/93
Pennsylvania	Philadelphia	WHYY-12	10/92
Pennsylvania	Scranton	WVIA-44	9/94
Tennessee	Knoxville	WKOP-15	8/94
Tennessee	Martin	WLJT-11	3/92
Tennessee	Memphis	WKNO-10	10/92
Tennessee	Nashville	WDCN-8	2/94
Tennessee	Sneedville	WSJK-2	8/94
Texas	Austin	KLRU-18	2/92
Texas	Dallas	KERA-13	1/90
Texas	Houston	KUHT-8	5/91
Texas	Lubbock	KTXT-5	1/94
Texas	San Antonio	KLRN-9	3/93
Utah	Salt Lake City	KUED-7/9	4/91
Virginia	Charlottesville	WHTJ-41	1/94
Virginia	Harrisonburg	WVPT-51	7/94
Virginia	Norfolk	WHRO-15	9/94
Virginia	Richmond	WCVE-23	1/94
Virginia	Roanoke	WBRA-15	10/94
Washington	Seattle	KCTS-9	10/90
Washington	Spokane	KSPS-7	9/93
West Virginia	Beckley	WSWP-9	8/90
West Virginia	Morgantown	WNPB-24	10/92

Wisconsin

Milwaukee

WMVS-10

1/90

Radio Reading Services in the following locations simulcast DVS programs:

Mobile, AL  
Sacramento, CA  
San Diego, CA  
Miami, FL  
Tampa, FL  
Olney, IL  
Urbana, IL  
Evansville IN  
Boston, MA  
Detroit, MI  
Jackson, MS  
Omaha, NE  
Schenectady, NY  
Syracuse, NY  
Rochester, NY  
Cincinnati, OH  
Cincinnati  
Cleveland, Columbus OH

**Radio Reading Services (cont.)**

Toledo, OH  
Corvallis, LaGrande, Portland OR  
Harrisburg, PA  
Lancaster County, PA  
Service  
Pittsburgh, PA  
Service  
York County, PA  
Warwick, RI  
Norfolk, VA  
Seattle, WA  
Kenosha, WI

WHIL Radio Reading Service  
In-Touch  
Radio Reading Service  
Radio Reading Service  
WUSF Radio Reading Service  
WUSI Radio Reading Service  
Illinois Radio Reader  
Radio Reading Service  
TIC Radio  
Detroit Radio Information Service  
Mississippi Radio Reading Service  
Radio Talking Book Network  
RISE Service  
Read-Out  
Reachout Radio  
Radio Reading Service of Greater  
  
Radio Reading Service

Sight Center Radio Service  
Golden Hours  
Tri-County Radio Reading Service  
Lancaster County Radio Reading  
  
Golden Triangle Radio Information  
  
York County Radio Reading Service  
Insight Radio  
Hampton Roads Voice  
Evergreen Radio Reading Service  
E.A.R.S.

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ATTACHMENT B - BROADCASTING MAGAZINE ARTICLE

# VNI picks digital video cameras

'One-man band' news service goes with Panasonic mini DVCams

By Glen Dickson

**V**ideo News International, the New York Times Co.-owned unit that specializes in "videojournalism"—using one-person crews that both report and operate a camera to produce long-form stories—has decided to replace its existing inventory of Sony Hi-8 analog cameras with Panasonic DV (digital video) minicams.

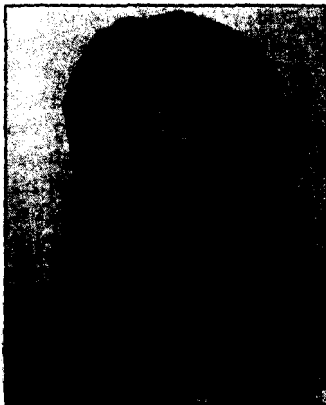
According to Michael Rosenblum, president of three-year-old VNI, the initial purchase will be for 20-30 cameras, with the full staff of 80 videojournalists (VJs) eventually being outfitted with the mini DVCams. The cameras cost about \$4,000 each.

The DV format, jointly developed by 10 consumer electronics companies including Sony and Panasonic, is being marketed mainly as a "prosumer" (professional-consumer) format, much as Hi-8 was at its introduction. Sony sells two consumer DV models, a one-chip and three-chip version, while Panasonic markets its digital three-chip camcorder on both the consumer and the professional sides.

A Panasonic spokesman says that VNI is purchasing the enhanced professional model, the AG-EZ1 DVCam. The camera weighs less than 2.4 pounds, produces 500 lines of horizontal resolution and can record one hour of component digital video using 5:1 intra-frame compression.

Rosenblum says that VNI considered both the Sony and the Panasonic DV models and chose Panasonic's version mainly because of its ergonomics. VNI beta-tested five of the DV cameras this fall in producing a one-hour documentary on hospital emergency rooms for The Learning Channel that will air in March.

"Compared to Hi-8, the picture quality is infinitely superior," says Rosenblum, adding that the new cameras also are lighter and use less power than the old analog Sonys. There is one major drawback, however: The DV tapes use a Panasonic DVCPRO tape deck for play-



VNI's Michael Rosenblum is switching to Panasonic PV-DV 1000 cameras.

back and dubbing, which requires a tape holder to make up for the size difference in the formats and a \$16,000 investment per VTR. (DVCPRO is Panasonic's new professional ENG digital format, due to be shipped in January. A DVCPRO camera costs \$16,000.)

Rosenblum would like to see a tape deck made just for the DV format, and he'd also like to see Panasonic's proposed DVCPRO laptop field editing system work with the "prosumer" format. VNI currently uses three Avid Media Composer nonlinear editors to edit tapes sent in from the field.

VNI chief correspondent Alan Tomlinson worked with the camera on The Learning Channel shoot, and while he says that there still is no perfect small camera for professional use, the DVCam comes close: "It shoots great pictures—as good if not better than Beta-SP."

Tomlinson says the DV's small lithium ion batteries are lightweight, and the camera is noticeably easier to handle than his heavier Hi-8. But he didn't like the color viewfinder or power zoom, and said the camera had a slow "trigger finger."

Also, the standard microphone mount was awkward because using a professional-length shotgun mike obstructed the periscopic viewfinder. So VNI devised an S-shaped mount to move the shotgun off to the side of the camera.

"But the pluses vastly outweigh the minuses," Tomlinson says. "If they got rid of a few annoying and unnecessary features, it would be just the thing." ■

## PacBell steps up AVS fiber service

Looks to grab cable market with MPEG-2

By Glen Dickson

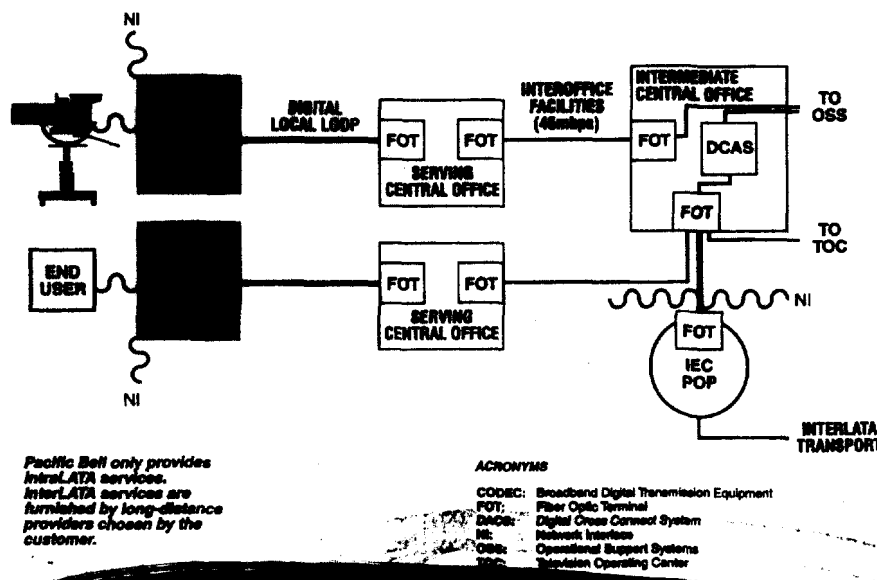
**S**ince PacBell rolled out its Advanced Video Service (AVS) at the 1993 Super Bowl, more than 100 post-production houses, movie moguls and network sport operations have signed up for the DS3 (45 megabits per second) fiber distribution service. Now PacBell is targeting cable operators by offering MPEG-2 compressed transmission over its fiber-optic network in California.

Ponderosa Cable in Danville, Calif., has used PacBell fiber for six years to distribute broadcast feeds from the Sutro Tower in San Francisco to its headend 35 miles east of the

city, on the other side of the Bay Area foothills that interfere with over-the-air transmission. This summer, Ponderosa was one of the early beta testers of a new MPEG-2 codec from NUKO Information Systems that PacBell is employing. (The AVS service has relied on Alcatel MPEG-1 codecs in the past.)

"We have 16 must-carry stations around here, and we want to get them all," says Ponderosa Cable managing partner Claude Cody. For the test, the AVS service brought seven channels from the Sutro Tower in MPEG-2 compressed form to Ponderosa's headend, where the signal was modulated for distribution over coax cable

## Advanced Video Service Architecture



2,000 cable homes.

Cody says the picture quality of the signal was excellent. The only draw-

back was the lack of closed-captioning in the feeds, a technical oversight on NUKO's part, says Cody. Once that

problem is solved, he plans to adopt the MPEG-2 service for all his broadcast feeds from San Francisco.

Cody estimates that he now spends \$500 per channel per month for the AVS service, which is packaged with a codec for his headend. (For the test, an MPEG-2 encoder was installed at Sutro Tower.) The fiber hookup to PacBell's digital switching center in San Francisco also allows Cody to connect to any other AVS users in PacBell's service area. Since PacBell tariffed the AVS service in 1993, Cody estimates that his fiber costs have been reduced 30%.

Nynex and Ameritech have tariffed similar services in their service areas, and Nynex is building a digital switching hub in New York City that will be comparable with PacBell's operation. In other AVS developments, PacBell will be offering D-1 compatibility to its existing broadcast customers in January and is experimenting with a "video mailbox" technology for the storage and forwarding of video.

## Warner Cable ARMs itself

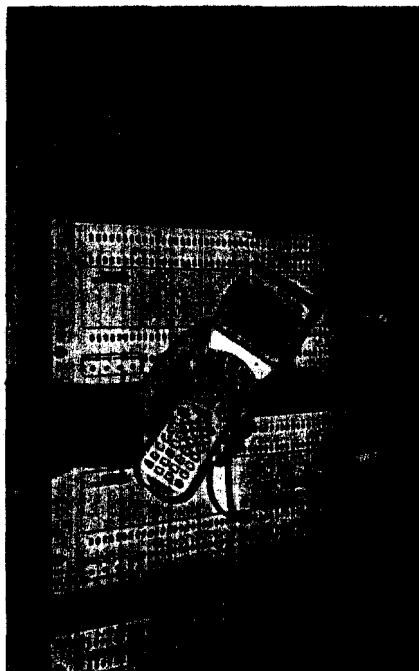
*Milwaukee system fights signal theft with hand-held unit*

By Glen Dickson

**W**arner Cable of Milwaukee has adopted a new strategy against cable piracy, employing a hand-held device called ARM (Automated audit Routing and resolution Method) to track unauthorized connections to its cable taps.

According to Ken Higgins, Warner Cable's director of new business development, ARM originally was intended as a replacement for Warner Cable's practice of having outside contractors audit the subscriber base every four years. The new system stores bar code information that can be checked against a central subscriber database and has turned out to be an effective way to discover cable pirates.

"It's allowed us to come at cable piracy from a new direction," says Higgins. "With the old audits, we'd disconnect an unauthorized user and they'd be back on in two months. Now every time our technician goes out in the field [for an installation or repair], the bar code tells him who's supposed



**Warner Cable—Milwaukee's ARM** (Automated audit Routing and resolution Method) combines this hand-held computer with a database tracking system to combat cable theft.

to be active and who's not. It's allowed us to monitor our system on a daily basis and keep an eye on the coaxial cable connected to the tap."

The hand-held computer has 3 megabytes of random access memory. "It's like having a 386 PC in your hand," says Higgins. When the technician goes to a tap, he simply punches in information on which connections he sees. Then that bar code information is checked against the master computer at Warner Cable headquarters, which easily identifies illegal users.

Warner Cable spent \$150,000 on R&D and computer programming for the new audit system, and each hand-held unit costs \$1,500 (Warner Cable has 35). Higgins says the system paid for itself in the first year. In the 18 months since the ARM effort began, Warner Cable has disconnected 40,000 unauthorized connections, with 9,000 of those "converted" into subscribers paying an annual fee of \$360 for basic service.

When an "unauthorized activity" is identified, Warner Cable's first step is a sales pitch to sign up the offender for legal service. If they refuse, they are disconnected. The company returns 30-60 days later to see if another illegal hookup has been